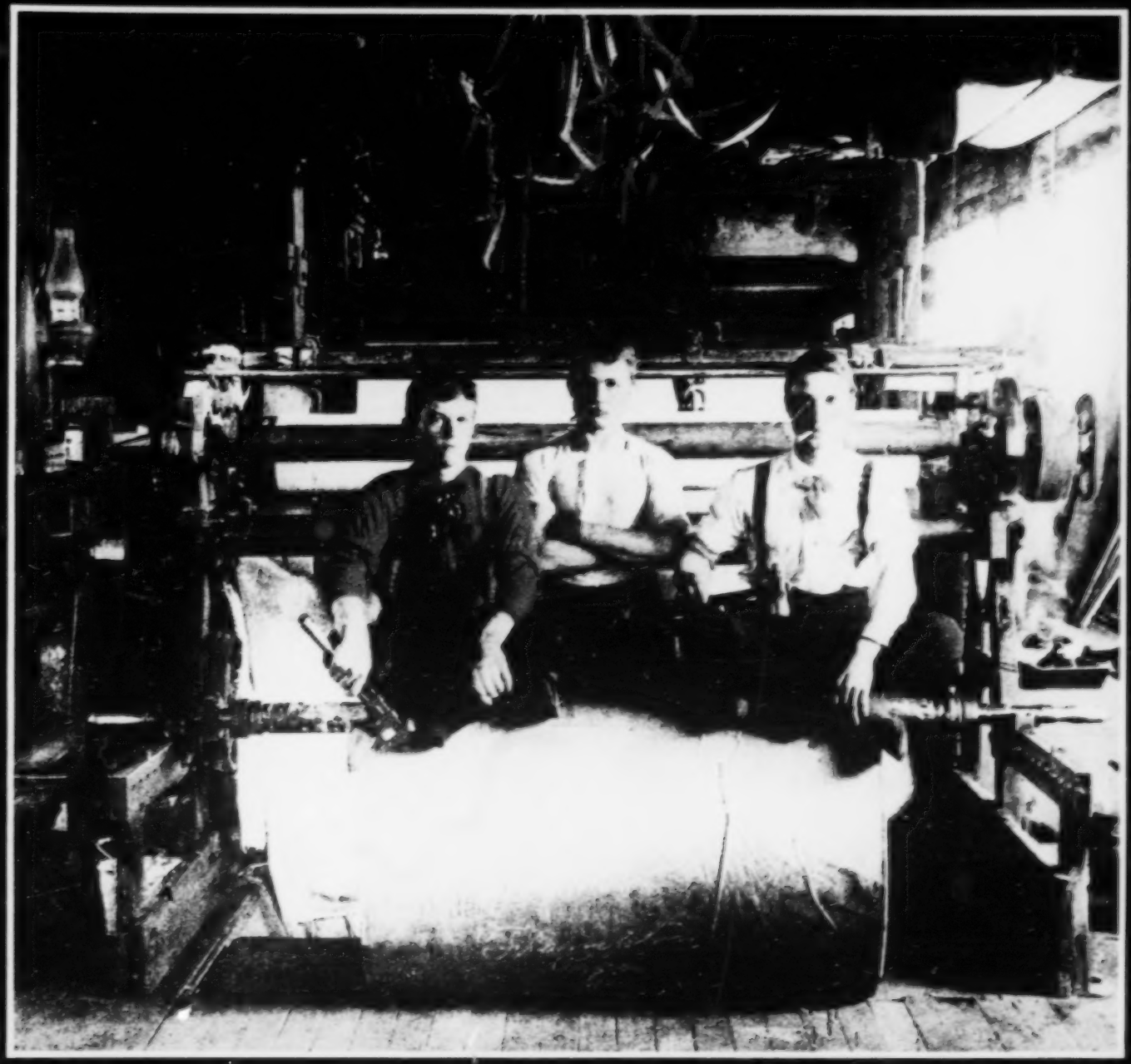
PULP & PAPER

December 1984



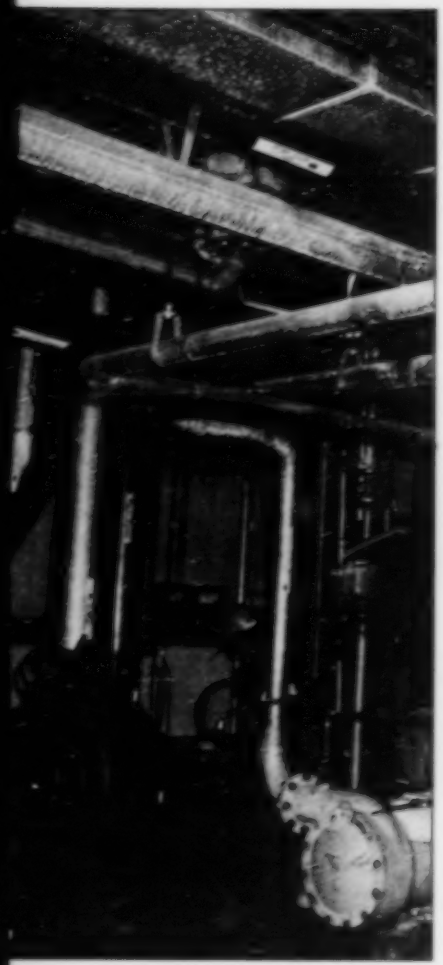
MILL MAINTENANCE: Streamlining the daily project

HOW DOES YOUR PAY STACK UP? Exclusive *P&P* salary survey 76

INTERVIEW SERIES: Hahn of Georgia-Pacific 92; **Dunlap of Lily-Tulip** 108

PULP & PAPER

Volume 58 Number 12 December 1984



NEW SS PIPE 60

HAHN 92

DUNLAP 106

COVER: *Christmas 1912. The No. 2 paper machine crew poses at Crown Zellerbach's Camas, Wash., mill. (Photo courtesy Crown Zellerbach.)*

ISSUE FOCUS: Mill Maintenance

57 **Peak process control system performance** is maintained at Brunswick Pulp & Paper by full-time, dedicated engineers in the mill's "results" maintenance program

60 **New ASTM specifications for stainless steel pipe** allow field welding without annealing, use of filler metals to improve weld strength

88 **Computer-based data acquisition systems** monitor multiple signal inputs from operating equipment and are a key to maintenance automation

96 **Elastomeric expansion joints prove superior** to metal in power boiler, recovery and causticizing flue ductwork applications at James River mill; joints are also easy and inexpensive to install

104 **Routine oil analysis at Flambeau Paper**'s Park Falls, Wis., mill, is key to establishing and monitoring a millwide lubrication program

P&P SURVEY: Salaries

76 **Results of second annual *P&P* reader salary survey:** median income is up 7% over last year to $44,000, morale is high, and most respondents still like their jobs

Mill Operations

62 **Advanced water recycling system at SAPPI mill** is designed to meet stringent South African water use, effluent regulations

73 **Automatic continuous starch preparation** at Midtec Paper replaces 70-year-old steam kettles; all coating binders can be made from unmodified cornstarch

109 **New-style large-diameter pulp cleaners** provide optimum efficiency; review of cleaner development reveals efficiency problems with small cleaners that can be overcome with larger units

Management

92 **Exclusive *P&P* interview with T. Marshall Hahn Jr.:** Georgia-Pacific's CEO has the company back on track to prerecession profitability

106 **Albert J. Dunlap, chairman and CEO of Lily-Tulip Inc.**, discusses his company's current turnaround and long-term strategy

119 **Annual *P&P* editorial index** for 1984 feature articles and news items: by feature story or news item subject, miscellaneous news story subject, company, foreign country, and cross-indexed by author

Table of contents continues on page 5

IP TO CLOSE CAMDEN MILL **23**

MADDEN COMMENTS **202**

News

9 **Month in Statistics**—U.S. paper and paperboard production
11 **Marketing Roundup**—Market pulp prices slide; $350 liner price holding; hot LWC market, supplies tight; more boxboard hikes posted
13 **Grade Profile**—Newsprint: market regains balance
23 **News Roundup**—**Closures:** IP to permanently close Camden kraft mill
25 **Expansion:** Consolidated expands Biron mill; Port Townsend Paper plans expansion
27 **Acquisitions/Mergers:** IP to purchase former Whippany mill; Shoreham acquires Watervliet Paper
29 **Energy:** Scott to build $115-million facility
31 **Sales & Earnings:** U.S. paper third-quarter profits up 66%
33 Canadian profits vault in third quarter
35 **Converted Products:** MB upgrades lamp wrap operations
37 **Technology:** Manville tests new coated linerboard
39 **International News:** MoDo increasing coated paper capacity; U.K. firm eyes share in Portuguese mill

Columns

7 **Editors' Notebook**—Season's Greetings from the editorial staff
41 **Washington Viewpoint**—Retaining tax preference in the days after
43 **Labor/Management**—The new "industrial" society
137 **Career Development**—Managing for results
149 **Engineer to Engineer**—Employment more important than benefits
202 **Industry Comment**—The role of business in society

Departments

45 **Conference Calendar**
139 **News of People**
157 **Product Showcase**
159 **New Products**
175 **Product Review**
177 **Current Literature**
187 **Book Shelf**
189 **Finishing/Converting**
190 **Supplier News**

Services

151 **Reader Service Index**
153 **Reader Service Card**
192 **Professional Service Directory**
194 **Jobs Wanted**
195 **Classified Advertising**
200 **Advertisers Index**

PULP & PAPER (ISSN 0033-4081) is published monthly except November when semi-monthly by MILLER FREEMAN PUBLICATIONS, 500 Howard St., San Francisco, Calif. 94105. Second class postage paid at San Francisco, CA, and at additional mailing office. POSTMASTER: Please send Form 3579 to PULP & PAPER, 500 Howard St., San Francisco, Calif. 94105.

© Copyright 1984 by Miller Freeman Publications Inc.
All rights reserved.

ABP BPA

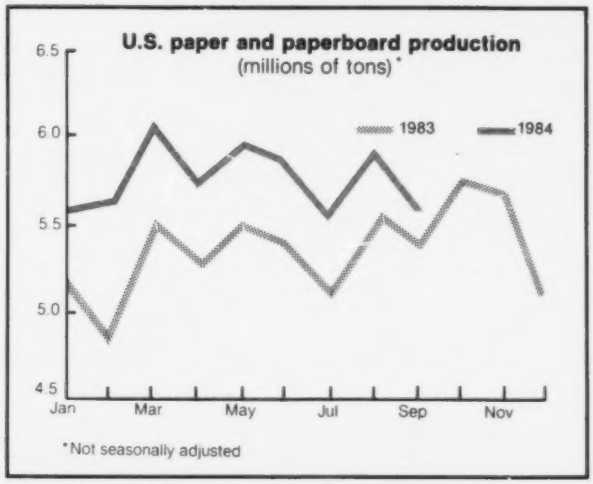
Subscriptions & Address Change: Sent without charge in the U.S.A. & Canada (upon written request) to individuals in pulp, paper, and board manufacturing firms and paper converting firms. To all others there is a subscription charge of $40.00 a year in the U.S. All subscriptions to other countries: $60.00 a year, except Europe and Mediterranean, $70.00 (air service included). Single copy, $4.00, except Buyers Guide, $22.50. Photocopies of articles and complete microform volumes available through University Microfilms International, 300 N. Zeeb Rd., Ann Arbor, Mich. 48106.

Requests, subscription orders, and address changes must show name and position or job of individual, name and location of mill, plant or office where employed, and exact business or product produced at this location. **Send subscription correspondence to:** Circulation Department, PULP & PAPER, 500 Howard St., San Francisco, Calif. 94105. For address change, include label from recent issue.

U.S. paper and paperboard production in September and throughout the entire third quarter showed a less than normal decline for the usually slow summer season, according to the American Paper Institute. If paper and paperboard production continues near the third-quarter rate during the remainder of the year, the 1984 total would exceed 69 million tons, establishing a new high.

Among major grades, nearly all paper grades showed relatively strong production trends in September and none showed significant weakness. The year-to-date packaging and industrial paper production rate of 5.85 million tpy was 5% above the year-earlier rate and close to the record high of 5.9 million tpy set in 1979. The containerboard grades continued to operate at close to capacity levels during the third quarter of 1984, with the production of milk carton grade up 5.8% over its 1983 rate.

Canadian newsprint shipments were slightly off last year's level, while inventories held by U.S. consumers increased 14.5% over September 1983 and jumped 57.8% from the August level.



		Latest month (000 short tons)	% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
[illegible]					
Newsprint	September	447	7.7	5,561	8.2
Uncoated groundwood (s)	September	133	5.6	1,601	6.7
Coated paper (s)	September	513	9.4	6,213	11.9
Uncoated free sheet (s)	September	741	6.2	9,222	6.3
Unbleached kraft packaging and industrial (s)	September	313	−7.0	3,900	3.3
Tissue	September	386	0.3	4,853	1.7
Total paper	**September**	**2,806**	**3.6**	**34,782**	**6.7**
Kraft linerboard, unbleached	September	1,378	4.4	16,299	9.0
Semichemical medium	September	436	10.4	5,227	11.9
Bleached paperboard	September	328	7.2	4,107	4.9
Recycled paperboard	September	621	2.0	7,971	8.9
Total paperboard	**September**	**2,854**	**4.7**	**34,802**	**8.7**
Total paper and paperboard*	**September**	**5,660**	**4.2**	**69,584**	**7.7**
[illegible]					
Total woodpulp production	August	4,790	7.4	56,066	7.7
Market pulp production	August	593	4.8	6,810	5.5
Wastepaper consumption at paper/board mills	August	1,350	12.0	15,852	10.5
Pulpwood consumption (cords)	August	7,368	−0.4	88,121	3.6
[illegible]					
Corrugated box shipments (billion ft²)	September	21.605	3.3	201.672†	7.0
Containerboard inventories at box plants	Sept. 1	2,711	12.0		
[illegible]					
U.S. paper imports (including products)	August	890	16.0	11,089	27.9
Imports of Canadian newsprint	August	696	20.4	7,690†	14.6
U.S. paper exports (including products)	August	357	−6.4	4,526	−1.7
Exports of unbleached kraft linerboard	September	177	13.0	2,146	−9.1
Exports of woodpulp	August	318	10.0	3,660	3.2
[illegible]					
Total newsprint shipments	September	734	−0.4	6,686†	8.1
Operating rates	September	92%	87%	91%	84%
Inventories held by U.S. consumers	September	1,480	14.5		
Woodpulp shipments (export only)	September	599	1.4	4,962†	−0.4
Operating rates	September	83%	84%	84%	85%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fiber Box Assn., Paperboard Packaging Council. 4. Canadian Pulp & Paper Assn.
*Includes construction and wet machine grades. †Not annualized. ‡Not directly comparable to year ago because of coding change. (s) = shipments.

Newsprint: Market regains balance thanks to healthy demand

Statistics	1983	1984e	1985e
United States			
Production, 000 short tons	5,168	5,505	5,700
Capacity, 000 tons	5,748	5,927	5,954
Utilization rate, %	89.9	92.9	95.7
Apparent U.S. consumption			
000 tons	11,677	12,495	12,870
lb/capita	100.1	106.1	108.2
000 tons/$billion real GNP	7.60	7.63	7.62
Canada			
Production, 000 tons	9,354	9,915	10,262
Capacity, 000 tons	10,990	10,951	11,023
Utilization rate, %	85.1	90.5	93.1

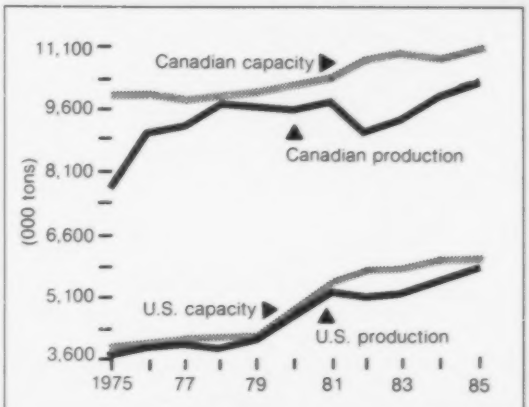
e = Estimated.

GRADE STRUCTURE: The majority of newsprint is intended for use by newspapers, with smaller volumes going to other end-uses such as newspaper inserts, government publications, comic books, and commercial printing. Offset printing represents about a fourth of the volume of newsprint consumed, with letterpress being the predominant printing method employed. Standard newsprint has a basis weight of 30 lb/3,000 ft², with some newsprint being made at up to 32 lb or as low as 28 lb or below. Some shift to 28-lb newsprint has occurred in the New England states.

PRODUCTION/CAPACITY: Newsprint demand began to recover strongly from the recession in the second half of 1983, and through September 1984 demand was running 9.5% ahead of 1983. U.S. output jumped 8.5% through the first three quarters of 1984 from the same period in 1983. Canadian production, hampered by reduced overseas markets, was up by a more modest 6.7%. Output in the final quarter of 1984 seemed destined to grow at a slower rate as publishers began trimming inventories for accounting reasons.

Canadian mills still supply about 57% of all U.S. newsprint. Canadian capacity dropped marginally in 1984 while U.S. capacity rose. The continued preference of U.S. publishers for U.S. suppliers, combined with the trend of Canadian mills to upgrade newsprint machines in order to make uncoated groundwood, indicates the long-term trend (of decreased Canadian presence in the U.S. market) seems likely to continue.

OUTLOOK: Demand should continue to grow at a healthy pace in 1985, barring a recession, but year-to-year increases like those recorded during most of 1984 will not persist. The U.S. economic recovery is clearly maturing, and newsprint demand is expected to rise about 3% after the 7% increase of 1984. This will lead to operating rates of almost 96% in the U.S. and about 93% in Canada, with capacity remaining flat. This should set the stage for an extremely tight supply/demand situation in 1986-88. Price increases have been announced for Apr. 1, 1985, which would bring the average eastern U.S. list to $517/short ton.



Top companies	Annual capacity (000 short tons) Canada	U.S.	Total	Capacity share (%)
1. Abitibi-Price	1,755	334	2,089	12.4
2. CIP Inc.	1,192	—	1,192	7.1
3. Bowater[1]	182	898	1,080	6.4
4. MacMillan Bloedel	981	—	981	5.8
5. Consolidated-Bathurst	970	—	970	5.7
6. St. Regis	—	811	811	4.8
7. Boise Cascade[2]	273	524	797	4.7
8. Kimberly-Clark[3]	373	420	793	4.7
9. Ontario Paper	790	—	790	4.7
10. Kruger Inc.[4]	789	—	789	4.7
11. Publishers Paper	—	577	577	3.4
12. Crown Forest	472	—	472	2.8
13. B.C. Forest Products	470	—	470	2.8

North American capacity (1984): 16.878 million tons
Capacity share of top five companies: 37.4%
Capacity share of top ten companies: 61.0%

1. Includes Catawba Newsprint (51% owned) and Calhoun, Tenn., mill; does not include Corner Brook, Nfld., mill sold to Kruger.
2. Boise Cascade: includes Boise Southern, DeRidder, La.
3. Includes Spruce Falls Power & Paper (50.5% owned).
4. Includes Corner Brook, Nfld., mill purchased from Bowater.

PRICING: Prices rose July 1, 1984 in the East to $485/short ton, but a Jan. 1, 1985 hike had to be postponed to April due to customer resistance. Prices in the West rose Oct. 1, 1984 to $485 (less 5%).

Price history is as follows: (U.S. East, contract, year-end) 1974, $235; 1975, $258; 1976, $285; 1977, $300; 1978, $320; 1979, $375; 1980, $400/$426; 1981, $453; 1982, $425; 1983, $454; 1984, $485.

MARKETS: Canadian producers supplied U.S. consumers with 57.4% of their newsprint in 1983, little changed from the 56.7% of 1982. In 1984 the percentage seemed to be returning to the 1982 level.

(News section continues on page 23)

CLOSURES

IP to permanently close Camden kraft mill

International Paper Co. has announced plans to permanently close its 255,000-tpy unbleached kraft paper mill at Camden, Ark., in April 1985. This would appear to complete the withdrawal of IP from production of unbleached kraft packaging grades with the shutdown of a 105,000-tpy machine at the company's Mobile, Ala., mill scheduled for early next year. And it would bring total announced U.S. major capacity withdrawals for unbleached kraft paper over the next several years to around 800,000 tons.

Mill manager Peter C. Redfern described the move as an "economic decision." Factors that were probably behind the decision included the need for major modernization expenditures at the Camden mill, the recent poor profitability of unbleached kraft paper, and an uncertain future for this grade because of plastic competition in the grocery sack market.

IP, however, said it would continue to run its four Bagpak Div. plants which make multiwall sacks (Camden, Ark.; Pittsburgh, Kans.; Wilmington, Ohio; and San Jose, Calif.) and its four Standard Products Div. plants which produce grocery, specialty bags and sacks and wrapping paper (Mobile, Ala.; Indianapolis, Ind.; Jackson, Tenn.; and Richmond, Va.). The company also will continue to produce bleached kraft packaging paper at its Mobile, Ala., and Moss Point, Miss., mills.

The mill has three machines (one 144-in. and two 192-in. trim) and a fairly modern pulp mill. Substantial modernization work, however, is reportedly required for the mill's low-pressure boiler system, which means that the facility must rely heavily on purchased rather than cogenerated electricity.

Capacity withdrawals. The shutdown of Camden would appear to bring total announced U.S. unbleached kraft paper capacity withdrawals over the next several years to 815,000 tons. This, of course, does not include smaller allocations of machine time from the production of unbleached kraft paper to the production of other grades, mainly linerboard.

The lastest American Paper Institute mill capacity survey pointed out that unbleached kraft paper capacity will decline from 4.09 million tons in 1982 to 3.84 million tons in 1986, with almost all of the 247,000-ton decrease due to the conversion of kraft paper machines to linerboard.

The most recent capacity withdrawals—the majority of which represent shutdowns or conversion to white paper production—were not included in the last survey.

The major factor causing the exodus has been the poor profitability of unbleached kraft paper grades, which performed particularly poorly during the last recession.

IP restructuring program. Shutdown of Camden represents the latest step in IP's massive restructuring of its southern kraft mills. The company shut down its Springhill, La., bleached paper and board mill in 1976 and then in 1979, sold its Panama City, Fla., linerboard and market pulp production mill.

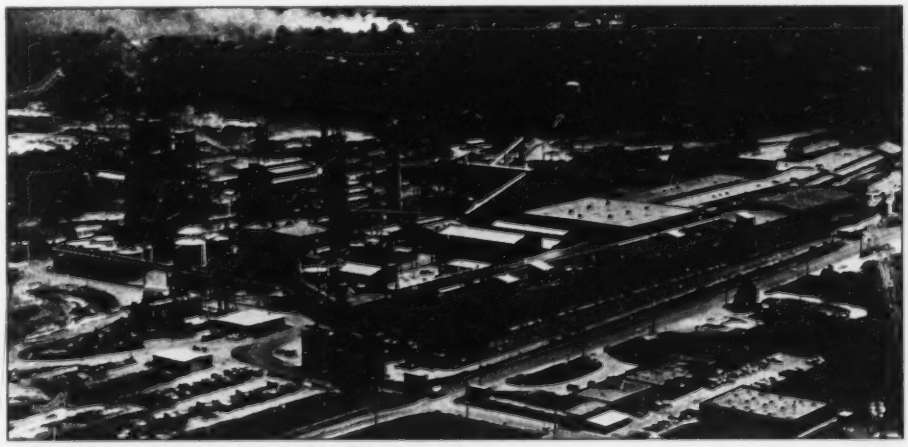
This was followed by the purchase of the Pineville, La., linerboard mill in 1979 and construction of the Mansfield, La., containerboard mill in 1981. IP recently converted its Georgetown, S.C., mill to bleached grades and has a similar program underway at its Mobile, Ala., mill.

In a recent newspaper interview, IP chairman, Edwin Gee said that the next mills on the company's list for modernization or closure are its Natchez, Miss., mill and its Moss Point, Miss., mill.

Major U.S. unbleached kraft paper capacity withdrawals.

Previously completed	Mill	Capacity (short tpy)	Date
Gulf States Paper	Tuscaloosa, Ala.	167,000	1978
Crown Zellerbach	Bogalusa, La.	140,000	1979
Boise Southern	Elizabeth, La.	105,000	1981
Manville Forest	West Monroe, La.	35,000	1981
St. Regis	Lufkin, Texas	100,000	1981
Total past withdrawals		**547,000**	
Recently announced			
Georgia-Pacific	Crossett, Ark.	157,000	1984
	Monticello, Miss.	158,000	1985
International Paper	Mobile, Ala.	135,000	1984-85
	Camden, Ark.	255,000	1985
Haindl Papier	Port Townsend, Wash.	110,000[1]	n.a.
Total future withdrawals		**815,000**	

1. Includes only current estimated kraft paper production.
Source: P & P estimates.



IP's unbleached kraft paper mill in Camden, Ark.

SALES AND EARNINGS

U.S. paper third-quarter profits up 66%

U.S. paper company earnings surged 66.3% in the third quarter compared to a year ago, and even overcame normal seasonal weakness to top their record second-quarter level by 7.8%, according to financial reports released by 27 companies. Forest products company profits were up 22.4% from a year ago, strengthened by their paper operations, but were off 35.1% from the second quarter, based on aggregate results for seven companies. Total U.S. paper and forest products profits for the third quarter were up 53.1% from a year ago on a 13.8% increase in sales.

Among factors helping profits of paper companies was continued strength in demand and prices for many grades, although some companies noted increased competitive pressure in uncoated white papers and market pulp.

International Paper Co.'s chairman, Edwin Gee, said, "Increased volume and prices resulting in higher profits in our industrial packaging area and in our pulp and paper segment are responsible for the dramatic rise in pretax operating earnings." IP posted earnings of $71.6 million in the third quarter, 7% higher than third quarter 1983 (which included a $44.5-million pretax gain from the sale of timberland). Sales hit $1.2 billion, a 9.4% increase.

Boise Cascade Corp. posted a 6.8% increase in sales and an 81.3% jump in earnings for the third quarter. John Fery, chairman and CEO, predicted that "the favorable trends for most paper grades should continue, although the environment for business papers and pulp is apt to remain highly competitive in the near term."

Coated paper strong. Coated papers continued to be one of the strongest segments of the paper industry, offsetting price weakness that developed during the period in uncoated paper grades. Burnell Roberts, chairman and CEO of Mead Corp., noted that white paper operations were led by a record performance at his company's Escanaba, Mich., coated publication paper mill. Consolidated Papers Inc.'s three coated printing paper mills ran at capacity, according to chairman and CEO George Mead.

Most companies reported sharply higher income from their paperboard and packaging operations from the depressed levels of a year ago. Temple-Inland Inc. reported an 89% increase in net income on a 7.2% increase in sales. Income from containerboard and corrugated box operations was up 341% from a year ago, while bleached paperboard operations income was up 151%.

Tissue remains competitive. Major tissue producers all posted increases in sales and earnings over last year's third quarter despite heated competition in most tissue markets. Kimberly-Clark Corp.'s earnings increased 21.1% on a 12.8% increase in sales compared to a year ago. Fort Howard Paper Co. posted a 47.5% increase in profits over a year ago, while Scott Paper Co. increased profits 38.5%. Chairman and CEO of Scott, Philip Lippincott, said earnings from sanitary tissue products were strong despite costs associated with the restart of a machine in Everett, Wash., and the introduction of several products.

Forest products. Forest products companies cited low prices and overproduction in reporting poor markets for wood products. Weyerhaeuser Co. net income was up 9.6% on an 11.3% increase in sales. President George Weyerhaeuser said earnings were down from the second quarter and attributed the drop to lower lumber prices and the impact of the strong dollar in export markets. Lumber output has exceeded demand, but the market apparently bottomed out in September, he said.

Champion International Corp. reported a jump of 64.5% in net income and an increase of 7.5% in sales over the 1983 third quarter. Chairman and CEO, Andrew Sigler, noted, "Our paper business is very good, but . . . our lumber and plywood operations continue to do poorly, and we don't see what's going to change those conditions."

U.S. paper and forest products companies' third-quarter results.

	Third quarter ($000)			
	Sales	Change 1984/83	Earnings[1]	Change 1984/83
Paper companies				
Bowater	$228,052	15.2%	$18,202	101.9%
Chesapeake	115,786	32.8	7,951	216.1
Consolidated	166,581	19.7	19,079	77.0
Crown Zellerbach	815,100	14.5	22,900	2.7
Federal Paper	157,009	19.0	12,227	442.9
Fort Howard	351,574	56.6	37,472	47.5
Glatfelter	70,024	13.8	8,142	78.2
GN Nekoosa	472,000	22.4	30,500	83.7
Hammermill	417,827	13.5	7,580	58.2
Int'l. Paper	1,187,500	9.4	71,600	7.0[2]
James River (7/29)	625,200	24.4	22,400	25.1
Jefferson Smurfit	169,095	12.7	6,753	166.4
Kimberly-Clark	904,600	12.8	52,700	21.1
Longview (7/31)	127,454	37.2	7,945	−3.8
Mead	708,100	11.6	48,200	85.4
Mosinee	48,599	40.5	2,062	9.7
Pentair	141,923	94.2	5,065	77.1
Scott	573,023	0.4	50,047	38.5
Sonoco	182,245	6.2	8,678	−14.7
SW Forest	203,113	11.4	4,100	n.m.
St. Regis	834,926	13.1	49,739[3]	156.7
Stone Container	318,418	130.4	13,760	675.2[4]
Temple-Inland	323,900	7.2	27,400	89.0
Union Camp	497,719	15.6	49,365	42.9
Wausau (8/31)	49,113	−2.7	1,544	12.8
Westvaco (7/31)	446,051	20.8	40,873[4]	174.0
Willamette	295,448	13.1	20,456	210.0[5]
Total	**10,440,398**	**17.3**	**670,567**	**66.3**
Forest products				
Boise Cascade	967,470	6.8	32,720	81.3
Champion Int'l.	1,131,150	7.5	40,222	64.5
Georgia-Pacific	1,880,000	9.9	64,000	4.9
Louis.-Pacific	312,700	14.2	7,000	59.1
Pope & Talbot	82,717	28.6	(589)	n.m.
Potlatch	249,089	7.8	11,173	3.7
Weyerhaeuser	1,393,054	11.3	58,290	9.6
Total	**6,016,175**	**8.2**	**212,816**	**22.4**
U.S. total	**16,456,573**	**13.8**	**883,383**	**53.1**

1. Income after taxes from continuing operations, excluding most significant nonrecurring items in both years.
2. Includes pretax gain of $44.5 million in 1983 from sale of timberland.
3. Includes sales of assets plus charges incurred by upcoming merger.
4. Includes $22 million net charge from tax reserve release and write-off of assets.
5. Includes 1983 $4.1 million net income gain on sale of plant.
6. Includes sale of assets in 1984.

n.m. = not meaningful.

Canadian profits vault in third quarter

Third-quarter profits of Canadian pulp and paper companies surged 203.7% on a 17.0% increase in sales over the same period a year ago, according to results from 11 companies included in *P&P*'s survey. Profits totaled C$71.1 million in the third quarter, on sales of C$3.2 billion.

Eastern Canadian companies continued to perform more strongly than those in the West due to relatively strong markets for newsprint, uncoated groundwood, white paper, and paperboard grades. Western companies were hurt by their heavy dependence on depressed lumber markets and profits of British Columbia companies could come under further pressure in the fourth quarter from deteriorating market pulp prices.

Third-quarter results of Canadian paper companies.

	Third quarter (C$000)			
Paper companies	**Sales**	**Change 1984/83**	**Earnings[1]**	**Change 1984/83**
Abitibi-Price	C$546,300	37.0%	C$15,338	71.2%
B.C. Forest	274,800	21.3	2,100	n.m.
Canfor	282,800	11.6	(5,400)	n.m.
Con-Bathurst	389,900	16.1	20,000	166.7
Domtar	509,100	5.9	23,300	39.5
Donohue	102,900	15.1	6,800	172.0
Fraser	127,000	13.4	(2,900)	n.m.
Great Lakes	152,091	19.6	5,445	n.m.
Mac. Bloedel	603,000	21.3	7,500	1,150.0
Rolland	70,700	21.5	1,408	−53.4
Weldwood	136,300	−11.4	(2,447)	n.m.
Canadian total	**3,194,891**	**17.0**	**71,144**	**203.7**

1. Income after taxes from continuing operations, excluding most significant nonrecurring items in both years.
( ) = loss. n.m. = not meaningful.

Abitibi-Price Inc. reported a 71.2% increase in net income over the 1983 third quarter and a 37.0% increase in sales. Earnings hit $15.3 million on sales of $546.3 million for the largest newsprint producer in North America.

MacMillan Bloedel Ltd. attributed its third-quarter profit of $7.5 million vs $600,000 a year ago to higher shipments and prices for newsprint, pulp and containerboard. However, Ray Smith, president of MB, said the earnings were "unacceptable" and added that the company can't continue to sustain the "high cost structure that exists in British Columbia" due to uncompetitive wage rates, timber harvesting costs and taxes. MB reported sales of $603.0 million, a 21.3% increase over the third quarter of 1983.

Canfor Corp.'s third-quarter report showed a net loss of $5.4 million vs a loss of $12.8 million a year ago on sales of $282.3 million. Peter Bentley, president and CEO, noted that despite relatively high housing starts lumber prices in the U.S. remained depressed during the third quarter. "The high value of the U.S. dollar continued to hamper offshore lumber exports, resulting in an oversupply for the North American market." He added that pulp shipments were at record levels during the quarter but pulp prices have weakened again due to the strong U.S. dollar.

LABOR

CPU ratifies contract at Thunder Bay

Canadian Paperworkers Union members at Great Lakes Forest Products Ltd.'s Thunder Bay, Ont., mill ratified a new three-year contract in October, following months of negotiations. The Dryden, Ont., mill strike has still not been settled, but talks are continuing, said a company spokesman.

The Thunder Bay settlement is similar to a three-year contract ratified at Abitibi-Price Inc. mills in June. It calls for pay hikes of 2.5%/4%/5% over three years, terms which have become the pattern for the industry in bargaining this year.

Operations resume at Neenah, Wis.

P.H. Glatfelter Co. resumed operations at its Neenah, Wis., paper mill on Oct. 15 after a 37-day strike by a local of the United Paperworkers International Union. Union membership voted on Oct. 13 to ratify the new two-year contract. The Neenah mill has the capacity to produce about 120,000 tpy of recycled printing and writing paper.

• A new three-year labor contract was ratified at **Scott Paper Co.**'s Chester, Pa., mill. It calls for cash payments to each employee of $500 the first year and $750 in each of the following two years. The contract became effective Sept. 28.

Port Angeles workers ratify contract

Striking members of the Assn. of Western Pulp & Paper Workers at Crown Zellerbach Corp.'s Port Angeles, Wash., mill ratifed a new five-year labor contract in November, ending a two-month strike by the paperworkers union (*P&P*, Nov., p. 29).

The first three years of the agreement are similar to a three-year contract ratified with the Employers Bargaining Council, representing Pacific Northwest mills of Georgia-Pacific Corp., Boise Cascade Corp. and Weyerhaeuser Co. The final two years of the CZ labor contract will be based on the West Coast industry's wage settlements in those years.

The EBC agreement calls for a $1,000 cash payment to each employee in the first year and wage increases of 4% and 4.5% in the last two years. It also introduces a new health-care plan which requires employee contributions for the first time.

• Members of the Assn. of Western Pulp & Paper Workers at CZ's Antioch, Calif., mill "overwhelmingly" rejected the company's final offer and no further talks were set as of the middle of November, the company said. The mill has been shut down since workers there walked off the job on July 27.

The Antioch rejection of the company's final offer came somewhat as a surprise since the union had ratified a similar agreement at CZ's Port Angeles, Wash., mill the week before .

SECOND SALARY SURVEY

A questionnaire in the August 1984 *P&P* asked readers for information on salaries, benefits, and job satisfaction; results are now in

Median income up 7% from last year

By KENNETH E. SMITH, Executive Editor

■ The December 1983 issue of *Pulp & Paper* (p. 48) reported the results of our first reader compensation/opinion survey. The survey was repeated this year, and readers were asked to complete a two-page, postage-paid survey form contained in the August 1984 issue of *P&P* (p. 76). The deadline for the return of these survey forms was Oct. 19. Responses were turned over to an independent data processing firm for tabulation, and the survey is now complete.

Last year's survey found that respondents were reasonably happy with their jobs despite the lingering effects of the recession. The median income of all respondents in 1983 was $41,000. Benefits averaged between $5,000 and $10,000. Last year 88.1% of all respondents said they liked their jobs. This year, median income jumped a healthy 7% to $44,000. Average value of benefits received by our respondents remained in the $5,000 to $10,000 range. Job satisfaction rose slightly, as 88.6% of all respondents said they liked their jobs.

The average survey respondent is male (96%), lives in the Southeast, works for a large (annual sales of more than $1 billion) wood products/pulp and paper manufacturer in mill operations, technical service, or engineering, and has a bachelor's degree in mechanical engineering, chemical engineering, or paper science and technology. The average respondent's stability seems to confirm a relatively high level of job satisfaction. Only 12% of all respondents changed jobs in the last three years. Average time with present employer is ten years.

Other interesting statistics are as follows:

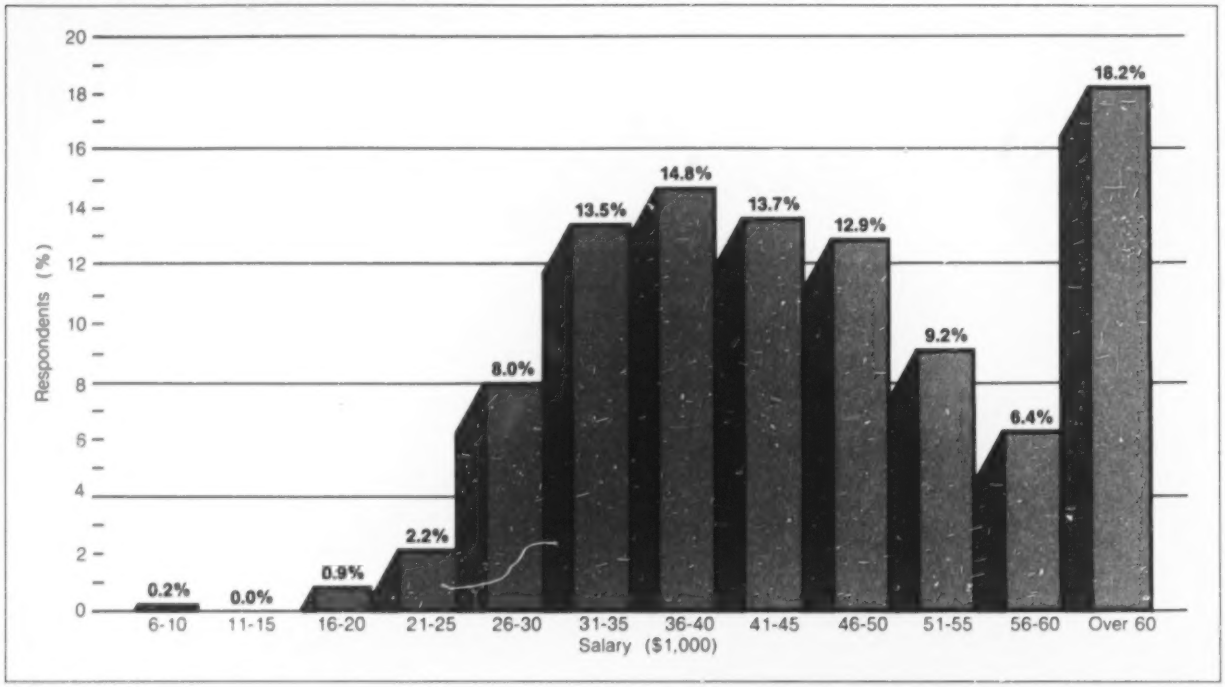
Compensation—

- Ten paid holidays and three weeks vacation are taken yearly on average
- An average of two salary increases in the past three years were received
- The last pay increase received by respondents averaged 7%
- 87.9% of all respondents are not paid overtime
- 92.8% normally receive annual salary reviews based on merit/performance (56.2%), cost-of-living index (3.5%), or both (28.4%)
- The average respondent has not had a promotion in the last three years.

Personal—

- 99.5% of all respondents work full-time; only 1.2% are self-employed
- 79% work for a wood products/pulp and paper manufacturer; 13.6% are consultants or suppliers to the industry
- 45 hours is the average respondent's workweek
- 50.5% work for companies with annual sales greater than $1 billion
- 64.9% of the respondents have at least team or unit management responsibility
- 17.1% work in mill/plant operations; 14.4% work in engineering design; and 14.2% work in technical service/quality control
- The average respondent's work experience since leaving school is between 10 and 14 years
- 56.9% live in either the Southeast (34.7%) or the Midwest (22.2%)
- 32.4% are between 31 and 40 years old; 58.8% are between 31 and 50 years old
- 86.7% have at least a bachelor's degree
- 26.2% have advanced degrees
- The most popular bachelor's degrees among the respondents were earned in mechanical engineering (16.7%), chemical engineering (14.4%) and paper science/technology (13.1%)
- 70.6% belong to a technical or professional society
- Average respondent has been with his present employer for ten years; the majority of respondents

FIGURE 1: **Income distribution of respondents.**



(61.2%) have had no more than two employers in their careers

- 60.5% have been in the pulp and paper industry all their careers.

Morale—

- On a scale of 1 (bad) to 5 (good), 60.6% rank their job morale at least a 4 (above average)
- 88.6% say they like their jobs
- 84% would stay in the paper industry if they changed jobs
- 88% feel their companies listen to their input and value their experience.

SURVEY RESULTS. Tables 1 through 19 present survey findings on compensation as compared with a number of variables including degree, discipline, work type and experience, size and type of employing organization, and supervisory level. This year 6.2% of our respondents were Canadian. Data for Canadian respondents have been broken out in Tables 17 through 19. Tables 1, 2, and 8 present the corresponding data for U.S. respondents only. All other tables contain data pertaining to all respondents.

The median income for Canadian respondents is $37,000. Reported value of average benefits was between $5,000 and $10,000. Median income of Canadian respondents, who represented only 3.6% of all respondents, in 1983 was $38,000. It should be kept in mind that respondents were asked to convert their salaries to U.S. dollars. Therefore, it is not clear if this decline in median income is due to the strengthening dollar or to other factors.

Income figures reported in all tables were obtained by adding any bonuses or additional income reported by respondents to their reported gross salaries. Survey respondents were asked to estimate the value of all benefits received by them as part of their compensation

TABLE 1: **Salary distribution of U.S. respondents.**

	Salary ($1,000) 1984	1983	Change (%)
Lower decile	30	28	7
Lower quartile	39	34	5
Median	44	41	7
Upper quartile	55	52	5
Upper decile	70	65	7

TABLE 2: **Employee benefits, U.S. respondents.**

Benefits value ($1,000)	Respondents (%) 1984	1983
0 to 1	0.4	0.5
1 to 2	3.2	4.2
2 to 3	4.7	6.7
3 to 4	7.0	7.7
4 to 5	4.9	6.8
5 to 10	31.2	32.4
10 to 15	25.1	21.8
15 to 20	10.9	10.0
20 to 50	12.0	9.0
>50	0.7	0.8

TABLE 3: **Benefits of all respondents.**

Benefit—	Respondents (%) 1984	1983
Medical insurance	92.7	95.9
Life insurance	91.3	92.8
Profit sharing	67.9	26.6
Retirement pension plan	86.1	88.1
Company car	41.1	11.1
Bonus plan	36.9	23.9
Stock option plan	34.9	48.7
Dental insurance	47.0	80.8
Travel budget	16.5	24.6
Education allowance	27.0	49.6

TABLE 4: **Income and type of employing organization, all respondents.**

Employing organization	Income ($1,000) Lower decile	Lower quartile	Median	Upper quartile	Upper decile	Change in median '83/'84 (%)	Respondents (%)
Academic	39	39	45	45	47	15	0.2
Government	8	8	31	31	51	−3	0.2
Wood/pulp/paper—engineering	30	36	45	58	68	8	13.5
Wood/pulp/paper—manufacturing	30	35	44	54	70	7	65.4
Consulting firm	32	42	51	58	70	1	5.6
Self-employed consultant	20	50	60	111	111	42	0.4
Wood/pulp/paper—supplier	30	36	45	56	71	0	8.1
Wood/pulp/paper—converter	27	33	42	58	80	4	3.2
Other	29	37	45	60	89	9	3.5

TABLE 5: **Income and principal work function, all respondents.**

Principal function	Income ($1,000) Lower decile	Lower quartile	Median	Upper quartile	Upper decile	Change in median '83/'84 (%)	Respondents (%)
Administration	34	46	58	82	122	18	10.2
R & D	31	37	45	55	66	9	5.2
Consulting	26	36	50	60	70	6	3.6
Engineering design	30	35	43	53	64	4	14.4
Teaching/academic	39	39	39	39	39	29	0.1
Product development	26	31	39	54	57	−4	1.8
Production and mill/plant operations	33	38	45	55	71	4	17.0
Engineering/maintenance	31	35	40	49	60	2	10.3
Sales and marketing	30	38	49	58	75	2	10.5
Technical service/quality control	29	33	39	46	54	8	14.2
Other	27	33	40	58	72	−2	8.5

packages. Table 2 shows a breakdown of benefit values reported by respondents over certain ranges. However, the value of certain benefits such as company cars, life and medical insurance, and retirement plans is often hard to estimate, and this data may not be totally reliable. Therefore, Table 3, which lists tangible benefits usually received as part of compensation packages compared with the percentage of respondents who normally receive them, is probably more useful for comparison purposes.

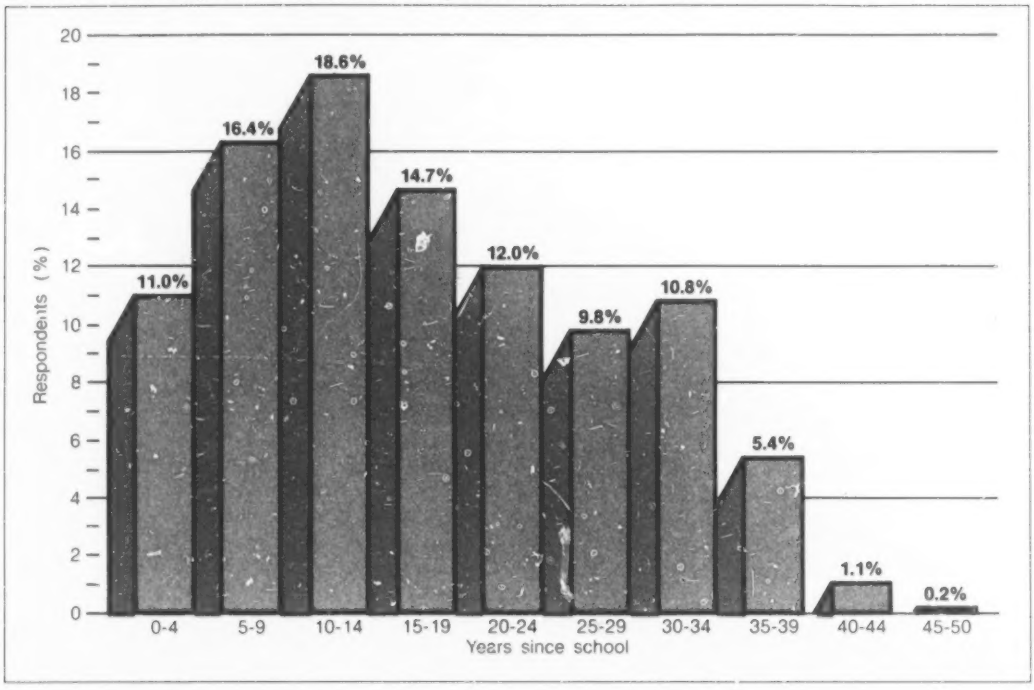
TABLE 6: **Income and size of employing organization, all respondents.**

Organization's annual sales ($ million)	Income ($1,000) Lower decile	Lower quartile	Median	Upper quartile	Upper decile	Change in median '83/'84 (%)	Respondents (%)
<100	25	32	44	56	72	−2	14.3
100 to 499	32	38	48	55	67	12	16.7
500 to 999	30	36	45	60	78	4	12.0
1,000 to 2,000	31	37	46	58	71	12	16.7
>2,000	31	36	44	56	70	2	33.9
Do not know	27	33	39	49	55	2	6.4

TABLE 7: **Income and level of supervisory responsibility, all respondents.**

Supervisory responsibility	Income ($1,000) Lower decile	Lower quartile	Median	Upper quartile	Upper decile	Change in median '83/'84 (%)	Respondents (%)
None	27	30	36	44	50	9	12.0
Indirect or staff	29	33	39	47	56	5	23.0
Team or unit	30	35	42	50	56	7	14.9
Project or section	32	36	46	54	60	7	18.9
Major department or division management	35	46	54	68	83	7	25.5
Corporate management of organization	36	51	70	104	150	9	5.8

FIGURE 2: **Years of experience distribution of respondents.**



ANALYZING THE DATA. The profile of our average 1984 survey respondent is very similar to that of last year's survey. The 7% increase in median salary this year seems to indicate that most respondents have benefitted from the industry's recovery to profitability. However, as previously mentioned (and also as found last year), respondents reported an average of only two salary increases in the past three years, while also indicating that their salaries are normally reviewed on an annual basis. This data certainly confirms last year's findings that salary freezes were in effect for many respondents during the recession and may still be in effect for some. Comments from respondents confirm this fact, and many people noted that their benefits have also been cut or frozen recently. These comments will be discussed more thoroughly below.

For the second year in a row, the highest median income ($70,000) was reported by respondents—as would be expected—at the corporate management supervisory level. In fact, Table 7 shows that the median income of all respondents corresponds directly to their level of supervisory responsibility.

A comparison (Table 5) of principal work function with median salary shows that the highest median salary ($58,000) belongs to those respondents in administration. Salaries of respondents in consulting ($50,000) and sales and marketing ($49,000) were a distant second and third.

No clear trend can be seen in Table 6, which relates size of the employing organization with median income, except that those respondents who do not know the amount of their companies' annual sales have a consid-

TABLE 8: **Income and professional experience, U.S. respondents.**

Years since school	Median income ($1,000)
0 to 4	32
5 to 9	36
10 to 14	43
15 to 19	49
20 to 24	49
25 to 29	55
30 to 34	52
35 to 39	57
40 to 44	50
>44	57

TABLE 9: **Income and educational field—bachelor's degree only, all respondents.**

	Income ($1,000)						
Discipline	Lower decile	Lower quartile	Median	Upper quartile	Upper decile	Change in median '83/'84 (%)	Respondents (%)
Forestry/agriculture	30	39	49	65	83	22	3.5
Chemistry	33	38	48	55	68	20	9.8
Mechanical engineering	32	35	44	58	68	2	16.7
Chemical engineering	31	36	46	58	73	6	14.4
Civil engineering	34	38	45	55	64	12	4.2
Electrical engineering	32	37	48	54	63	11	5.4
Industrial engineering	29	37	44	56	82	7	2.3
Mathematics/physics	33	37	46	55	75	15	1.5
Computer science	25	25	25	25	25	−40	0.1
Biology/life science	27	29	33	42	53	2	2.0
Paper science and technology	29	33	41	51	65	7	13.1
Environmental science	29	35	38	46	51	−9	1.0
Business	31	37	49	59	78	13	18.1
Liberal arts	29	37	50	63	72	2	2.8
Other	30	34	44	56	80	−2	5.1

TABLE 10: **Income, professional experience and educational level, all respondents.**

Years since school	Highest degree	Income ($1,000) Lower decile	Lower quartile	Median	Upper quartile	Upper decile	Change in median '83/'84 (%)
0 to 4	B.S.	30	31	33	35	41	6
	M.S.	20	36	42	42	42	13
	Ph.D.	38	38	38	38	45	18
5 to 9	B.S.	29	33	37	40	43	2
	M.S.	41	43	49	57	60	16
	Ph.D.	29	33	40	49	55	−17
10 to 14	B.S.	34	36	44	50	58	4
	M.S.	42	47	50	61	64	0
	Ph.D.	32	37	42	54	64	2
15 to 19	B.S.	38	42	50	61	80	8
	M.S.	46	50	58	70	77	11
	Ph.D.	34	43	52	59	63	0
20 to 24	B.S.	41	44	57	75	92	18
	M.S.	39	49	52	71	101	−5
	Ph.D.	35	47	49	58	61	−6
25 to 29	B.S.	49	53	56	80	107	−3
	M.S.	25	51	59	70	70	13
	Ph.D.	38	40	78	92	100	30
30 to 34	B.S.	36	48	51	55	71	6
	M.S.	44	49	60	86	98	11
	Ph.D.	40	48	58	84	99	16
35 to 39	B.S.	48	54	68	72	77	21
	M.S.	66	66	66	66	66	32
	Ph.D.	43	43	59	89	90	100
40 to 44	B.S.	50	50	50	64	64	0
	M.S.	0	0	0	0	0	0
	Ph.D.	0	0	0	0	0	0
>44	B.S.	0	0	0	0	0	−100
	M.S.	0	0	0	0	0	0
	Ph.D.	0	0	0	0	0	0

erably lower median income than those who do know.

Self-employed consultants—although representing only 0.4% of all respondents—are doing quite well with a median income of $60,000 (Table 4). The second-best paying type of employment is consulting firms, whose respondents reported a median income of $51,000.

Table 8 shows that median income of all respondents increases with years of professional experience through 29 years. After that point the correlation is not as clear and seems to confirm the often-discussed problem of salary compression; i.e., salaries of recent graduates and newer employees advance faster than those of older, more experienced employees. Many of our respondents have commented on this problem. Interestingly, Canadian respondents with more than 29 years' experience also seem to encounter this problem (Table 19).

Table 9 contains a couple of surprises. The highest median income ($50,000) was reported by respondents with bachelor's degrees in liberal arts. And the discipline with the second highest income ($49,000) was forestry/agriculture, which tied with business. These two groups represent only 2.8% and 3.5%, respectively, of all respondents, and therefore this data may be misleading. It is hard to draw any conclusions without more definitive data, except to say that the pulp and paper industry presents excellent job opportunities for a very diverse group of people.

As with last year's survey, no noticeable difference in income and benefits was seen between geographic regions within the U.S.

TABLE 11: **Income, professional experience and educational field, bachelor's degree only, all respondents.**

Years since school	Forestry/ agriculture	Income ($1,000) Chemistry	Mechanical engineering	Chemical engineering	Civil engineering
0 to 4	31	36	32	32	31
5 to 9	34	38	35	38	37
10 to 14	39	37	42	46	44
15 to 19	41	50	52	49	48
20 to 24	54	48	57	52	50
25 to 29	42	58	60	62	53
30 to 34	65	50	52	55	49
35 to 39	47	50	66	57	60
40 to 44	0	31	52	70	0
>44	0	0	57	0	0

FIGURE 3: **Age distribution of respondents.**

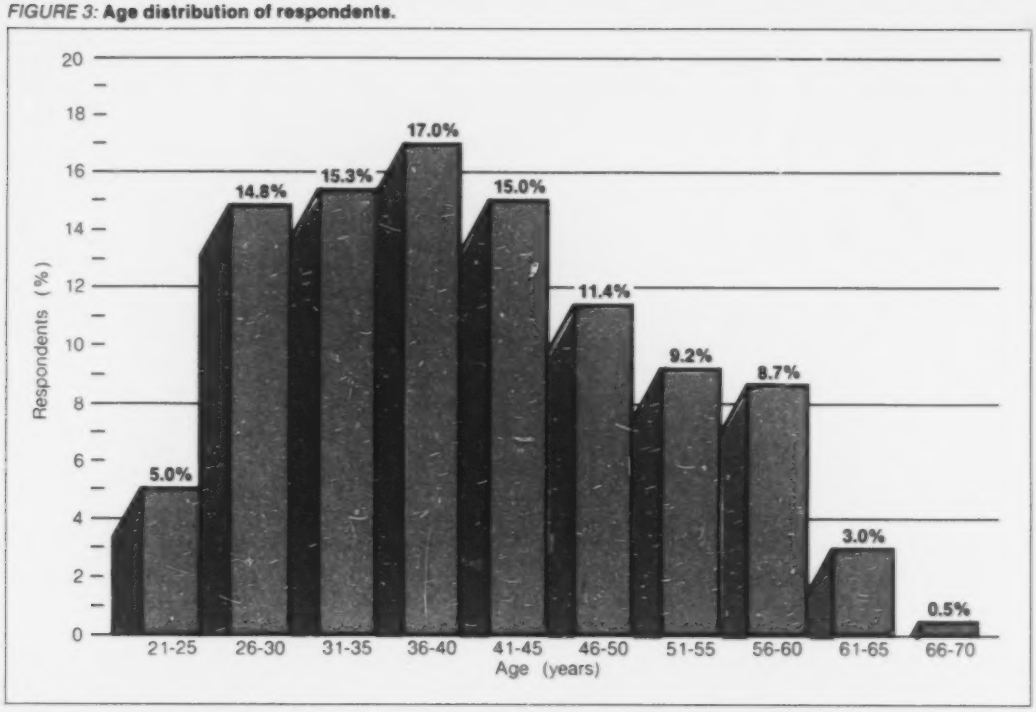


TABLE 12: **Income and number of years with current employer, all respondents.**

Years	Median income ($1,000)	Change in median '83/'84 (%)	Respondents (%)
5 or less	36	5	13.8
6 to 10	37	8	11.7
11 to 15	36	5	18.9
16 to 20	38	2	14.9
21 to 25	40	0	16.7
26 to 30	41	5	12.7
31 or more	41	0	11.3

TABLE 13: **Income and number of full-time employers to date, all respondents.**

Employers	Median income ($1,000)	Change in median '83/'84 (%)	Respondents (%)
1	40	8	33.6
2	44	4	27.6
3	47	11	18.2
4	49	6	11.1
5	50	2	6.2
6 or more	49	16	3.3

Job stability (or perseverence/experience) does pay, according to survey respondents with 26 or more years with their current employer (Table 12), who reported the highest median income ($41,000) in a comparison of income and years with present employer.

Conversely, job-hopping also seems to pay for those respondents who have had five or more employers in their careers (Table 13). Those respondents reported a median income of $50,000, compared with an income of $40,000 for respondents who have had only one employer. As previously discussed, our respondents are a very stable group, and only 38.8% have had more than two employers.

RESPONDENTS COMMENT. The survey form included a space for comments, and many interesting ones were received. Two themes predominated: pay and benefits of salaried personnel are not keeping pace with those of union workers at many locations, and salary compression is a problem that affects even mid-level professionals.

A B.S.Ch.E. working in technical service/quality control at a linerboard mill in the Northwest says, "Management of this corporation has failed to keep salaried personnel on an even par with union personnel. This is the primary reason for bad morale."

A B.S. in Chemistry working in environmental control at a midwestern market pulp mill echoed this sentiment: "Salaried personnel do not get the same benefits as the hourly people. We have gotten 7% and 8% raises when the union got 10% and 12%."

An engineering department section manager at a fine paper mill in the Northeast commented, "Virtually every hourly maintenance man working an equivalent number of hours will earn more—with much less responsibility—than I do. This is very wrong. We just

TABLE 14: **Income and type of wood/pulp/paper company, all respondents.**

Type	Median income ($1,000)	Change in median '83/'84 (%)
Wood products	42	7
Pulp/paper/linerboard	42	7
Woodlands operations	45	45
Chemical byproducts	40	−4
Corporate or administration	51	9
R&D	45	9

TABLE 15: **Income and number of years management experience, all respondents.**

	38	0	12.5
	37	0	11.7
	40	0	14.0
	44	15	13.0
	42	0	16.0
	43	−4	11.7
	38	−2	10.0
	42	−4	12.4

TABLE 16: **Income and number of employees managed, all respondents.**

Employees	Median income ($1,000)	Change in median '83/'84 (%)	Respondents (%)
None	39	8	24.1
1 to 5	41	2	24.1
5 to 20	42	4	20.0
21 to 50	46	12	16.5
More than 50	46	9	15.6

completed a six-week shutdown working 11 hours per day, six days per week, plus five full weekends in a row except one Sunday off. Hourly people get hurrayed and get paid. We got five days comp time."

Summing it up, a B.S. in pulp and paper science/technology at a southern market pulp mill says, "Professional salaries have fallen behind union hourly salaries in the last three to five years and show no signs of catching up. This is demoralizing, especially for young professionals who see people washing up the mill making more money than they are."

Respondents had some equally emotional comments on the salary compression dilemma. A B.S.M.E. at a paper mill in the Southeast notes, "It's difficult to cope with the fact that all new college graduates coming to work here start out at more than people who have been with the company for a while."

A B.S. in pulp and paper science/technology at a southeastern linerboard mill commented, "I was grateful for the large amount of my most recent salary increase until a new engineer was hired shortly after at almost the same salary. This is not the first time this has happened."

A technical service/quality control engineer at a fine paper mill in the Northeast asks, "Are managers aware of the effects of salary compression resulting from trying to obtain the most talented college graduates? They make more than some engineers with three to five years' experience."

The comments of a business major/administration manager at a midwestern mill summarized the problems faced by many industry professionals in recent years: "The uniform procedures for dealing with employee compensation seem to be anything but uniform. Blue collar formulas, wage freezes, salary increase limits, and union labor negotiations have created an extremely discriminatory and morale-deflating environment. I am thankful for having survived the recent recession and several less severe ones. However, I am also somewhat bitter over having earned $32,000 less than I would have if I had been granted the same increases union employees and salaried employees covered by the blue collar formula received in recent years. This grossly influenced my savings plan and will have a similar negative effect on my retirement benefits."

Of course, many favorable comments on the industry and its working conditions were also received—after all, 88.6% of the respondents did say they liked their jobs. These can be summed up by a B.S.Ch.E. at a midwestern research and development facility who says, "The people of the pulp and paper industry as a whole are hard working and great to work with. I love my job." Or, more simply said by a manager at a paper mill in the Northeast, "I love the pulp and paper industry."

One last amusing comment on compensation was sent by a maintenance manager at at fine paper mill in the Northeast: "I guess most people feel they are worth more than they get paid. I am not an exception."

The editors of *Pulp & Paper* hope that this annual survey will be useful to our readers. We have tried to design the survey to meet the needs and interests of all industry professionals. Reader comments on how this survey or *Pulp & Paper* itself can be improved are always appreciated and should be addressed to:

Executive Editor,
Pulp & Paper
2700 Cumberland Parkway N.W., Suite 530
Atlanta, Ga. 30339 ■

TABLE 17: **Salary distribution of Canadian respondents.**

	1984 salary ($1,000)
	27
	32
	37
	50
	60

TABLE 18: **Canadian employee benefits.**

Benefits value ($1,000)	1984 respondents (%)
0 to 1	6.1
1 to 2	13.3
2 to 3	8.2
3 to 4	15.3
4 to 5	5.1
5 to 10	28.6
10 to 15	12.2
15 to 20	5.1
20 to 50	6.1
>50	0.0

TABLE 19: **Income and professional experience, Canadian respondents.**

Years since school	Median income ($1,000)
0 to 4	25
5 to 9	33
10 to 14	38
15 to 19	40
20 to 24	45
25 to 29	48
30 to 34	43
35 to 39	50
40 to 44	28
>44	53

NOTE

ONLY THE FOLLOWING PAGES OF THIS

PUBLICATION HAVE BEEN FILMED

Cov. 1, p. 3, 5, 9, 13,

57-66, 71-77, 109-118,

136-139, 207.